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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,367	07/24/2003	Leon Axel	5986/1K435US1	2452

7278 7590 05/28/2008  
DARBY & DARBY P.C.  
P.O. BOX 770  
Church Street Station  
New York, NY 10008-0770

EXAMINER
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ALTER, ALYSSA M

ART UNIT	PAPER NUMBER
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3762

MAIL DATE	DELIVERY MODE
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05/28/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/627,367

Applicant(s)

AXEL, LEON

Examiner

ALYSSA M. ALTER

Art Unit

3762

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period **will** apply and **will** expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply **will**, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 and 28-55 is/are pending in the application.
- 4a) Of the above claim(s) 48-55 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 and 28-47 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 4, 2007 has been entered.

### ***Response to Arguments***

Applicant's arguments filed December 4, 2008, with respect to the 102 rejections anticipated by Long and Blakeley et al. have been fully considered, in light of the claim amendments, and are persuasive. Therefore the 102 rejections anticipated by both Long and Blakeley et al. have been withdrawn. Also, the Applicant's arguments filed December 4, 2008, with respect to the 102 rejection anticipated by Bjorling et al. have been fully considered but they are not persuasive.

The Applicant argues that Bjorling et al. does not teach a correlation threshold or a threshold comparisons. However, as disclosed on page 1, paragraph 10 "Comparison of the signal waveform to stored signal templates, respectively representing previously-obtained abnormal signals, is also a known technique. In this manner, a determination is made as to whether the incoming signal represents normal sinus rhythm, a PVC, tachycardia, atrial fibrillation, ventricular fibrillation, etc." Therefore, Bjorling et al. does teach correlation threshold and a threshold comparison with the templates.

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Additionally the Applicant argues that Bjorling et al. does not suggest that the templates are of a "QRS complex template representative of a shape in time unique to QRS complex". However, since Bjorling et al. discloses templates for comparing signal waveforms, i.e. a QRS complex, there is thus a template representative of a shape in time unique to the QRS complex. Thus, the claims stand rejected under Bjorling et al.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-9, 16-22, 25-26, 28 and 30-33 stand rejected under 35 U.S.C. 102(e) as being anticipated by Bjorling et al. (US Patent Publication 20030100923 A1). Bjorling et al. depicts in figure 5, a QRS detector, template collector and a pattern recognition unit. The ECG morphology is correlated to the template morphology with direct correspondence between detected signals and stored templates.

As Bjorling et al. discloses on page 1, paragraph 10, "conventional detection algorithms analyze the signal by undertaking one or more threshold comparisons and/or by analyzing the rate of occurrence of a particular characteristic of the signal (i.e., maxima, minima, zero crossings, etc.) over a given period of time. Comparison of the signal waveform to stored signal templates, respectively representing previously-

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obtained abnormal signals, is also a known technique. In this manner, a determination is made as to whether the incoming signal represents normal sinus rhythm, a PVC, tachycardia, atrial fibrillation, ventricular fibrillation, etc". Therefore, Bjorling et al. does teach correlation threshold and a threshold comparison with the templates.

Additionally, since Bjorling et al. discloses a template for comparing signal waveforms, i.e. a QRS complex, the template is thus a representative of a shape in time unique to the QRS complex.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-26 and 28-47 stand rejected under 35 U.S.C. 103(a) as obvious over Blakeley et al. (US 5,038,785). Blakeley et al. discloses a cardiac monitor to record cardiac signals during a MRI scan. Blakeley also discloses "the threshold detector 78 establishes a threshold level at two thirds of the previous R-wave peak derivative. Once the threshold has been exceeded a zero cross means 80 searches for the next occurrence of zero crossing of the derivative signal. Comparing the derivative of the received cardiac signal with two thirds of the previous R-wave peak derivative locates the R-wave peak of the current cardiac signal. In this manner, variations in the derivative of the cardiac signals are automatically corrected"(col. 6, lines 54-63).

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Blakeley et al. to discloses the claimed invention except for a template. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the compared signals as taught by Blakeley et al. with the a template, since it is well known in the art to employ templates to provide the predictable results of quickly and accurately compare cardiac signal morphology to diagnosis patient cardiac health.

As to claims 6, 12-15, 33, 36-39 and 42-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Blakeley et al. (US 5,038,785). Blakeley et al. discloses the claimed invention except for the assigned correlation value or the assigned weighted score. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the correlation to the ECG template as taught by Blakeley et al. with a value or weighted score, in order to accurately correlate the features of the signal to the template. Furthermore, the numerical score would enable a patient ECG to be monitored for arrhythmias, as disclosed by Blakeley et al.

2. Claims 12-15, 33 and 36-39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Bjorling et al. (US Patent Publication 20030100923 A1). Bjorling et al. discloses the claimed invention except for the assigned weighted score. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the correlation to the ECG template as taught by Bjorling et al. with a value or weighted score, in order to provide the predictable results of accurately correlate the features of the signal to the template.

***Claim Objections***

1. Claims 40-47 are objected to because of the following informalities: improper claim status indicated for the claims. The claims state that they are “(New)”, when in fact they are “(Previously presented)”. Appropriate correction is required.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALYSSA M. ALTER whose telephone number is (571)272-4939. The examiner can normally be reached on M-F 9am to 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Angela Sykes can be reached on (571) 272-4955. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/George R Evanisko/  
Primary Examiner, Art Unit 3762

/Alyssa M Alter/  
Examiner  
Art Unit 3762